The Frigate tuna, *Auxis thazard*, is a small pelagic neritic tuna, member of the family Scombridae which includes tunas, mackerels and bonitos. It is a highly migratory species with a worldwide distribution throughout all tropical and subtropical seas (Liu, 2008). This species is the majority in the catches of fish landed in the different ports of the coastal African countries. These fish are thus of paramount socio-economic importance to many coastal communities because their fishing provides many jobs (Diaha & al., 2009).

According to CTOI in 2017, no quantitative assessment of the Auxide stock in the Indian Ocean is available to date, and due to the lack of fish data on several gears, only provisional stock status indicators can be used. Growth is perhaps the most studied of all parameters used to describe the life history of exploited fish (Katsanevakis and Maravelias, 2008). An understanding of growth is fundamental for population modeling, stock assessments, and managing exploited species (Gulland, 1988). The most commonly used data for estimating fish growth is length-at-age data, although length-frequency data and mark recapture data are also used (Francis, 1988; Labelle and al., 1993). This study proposed to improve the biological knowledge of auxide in the southwestern Indian Ocean and to estimate the parameters of growth.

The specimens of auxide that were used in our study came from the bycatch of European seiners who landed at the port of Antsiranana from 2012 to 2018. The individuals are identify and measure according to the length at the fork (LF). The methodology established by the USTA and IRD-France is to measure 200 tuna individuals per day per vessel, depending on the duration of landing of tunas. The number of the measured individuals depends in general on its abundance in quantity. The more abundant it is, the greater the frequency of measurement. The information collected is processed statistically and mathematically through software such as the Excel 2016 and the data frequency analysis, LFDA 5.

Growth was expressed in terms of the following equations (von Bertalanffy, 1938):

\[ L_t = L_\infty \left(1-e^{-K(t-t_0)}\right) \]

where \( L_t \) is the fork length and body weight at age \( t \), \( L_\infty \) is the asymptotic fork length, \( k \) is the growth coefficient, \( t \) is the age, and \( t_0 \) is the theoretical age when the specimen was at zero fork length.

The relationship between the weight of a fish and its length was calculated by the equation:

\[ W = aL^b \]

Where \( L \) is the length of the fish, \( a \) is a constant, and \( b \) is the coefficient of allometry. The parameters derived from these equations were used to estimate mortality rates (Z, M, and F).

The study of linear growth based on 10 437 individuals of the total strength of the auxide, allowed the determination of the growth parameters of von Bertalanffy. The size frequency is dominated by the size between 38.5 cm and 44.5 cm. Following an estimated calculation by LFDA 5.0, \( L_\infty = 48 \) cm and the \( K = 0.53/\text{year} \). The value of \( t_0 \) is also estimated by the formula of Pauly, and the value estimated is - 0.55. The value of \( L_\infty \) is close to that estimated by Yu and al., 2012 (Taiwan) and Dwinpongo and al., 1986 (Indonesia). And for parameter \( K \), the value obtained is close to that obtained by Joseph and al., 1986 (Sri Lanka) and that
found by Yu and al., 2012 also. For weight growth, the value of allometry is estimated, and $b = 2.42$. The value obtained and that obtained by Rugpan and al., 2008 indicates a minor allometry, while the other authors obtained a major allometry in Indian Ocean. This means that the weight of the species studied is relatively slower than the length. The values obtained ($Z = 0.90; M = 0.76; F = 0.14$) are close to that found by Lu and al., 1991, but lower than that of Yu Tao and al., 2010 and Ghosh and al., 2010.

The results of this work allow us to say that the parameters of the biology and population dynamics of the species *Auxis thazard* in the southwestern Indian Ocean do not differ significantly from other regions of the Indian Ocean. The dominant catch size is longer than the maturity size reported by Tester and Nakamura (1957), Yasui (1975). These values indicate that the population of the auxide studied is still abundant in the southwestern Indian Ocean.